FORT SAM HOUSTON
DINING FACILITIES

San Antonio, Texas

Energy Engineering Analysis Program (EEAP)

Executive Summary

Final Submittal

Conducted by:

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June
~~April~~, 1994

C&B Job No. 91109912F

DEPARTMENT OF THE ARMY
CONSTRUCTION ENGINEERING RESEARCH LABORATORIES, CORPS OF ENGINEERS
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TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

This report was conducted to identify Energy Conservation Opportunities (ECO's) for twenty one (21) dining and kitchen facilities at Fort Sam Houston and Camp Bullis. All sources of energy consumption were considered in this report, including electricity, natural gas, and steam.

BUILDINGS/FACILITIES AUDITED

FORT SAM HOUSTON

The dining/kitchen facilities at Fort Sam Houston analyzed for this report range in age from late 19th century to less than 10 years old. Construction types also vary widely. The majority of the facilities are constructed of concrete block walls with face brick, although wood frame, stone and stucco construction was also observed.

CAMP BULLIS

The dining/kitchen facilities at Camp Bullis are all of similar construction and were built in the early 1900's. These facilities are wood frame construction with lapboard exteriors.

PRESENT ENERGY CONSUMPTION

Electricity and gas are not sub-metered to the building level. The gas supply is sub-metered randomly with some buildings having multiple meters and some meters feeding multiple buildings. The electrical usage is primarily metered thru two central sub-stations for the entire base. Therefore, the energy consumption information is based on the total base consumption as metered thru the two main sub-stations. (Refer to Table 1 for Base Year Utility Consumption).

TABLE 1. BASE YEAR ENERGY CONSUMPTION DATA (Individual Meter)

For prior 12 month period beginning September, 1992 and ending August, 1993.

	Electrical							Natural Gas	
Months	Consumption KWH	Demand Metered KW or KVA	Demand Charged KW or KVA	Power Factor	Fuel Adjustment $/KWH	PCRF or Cogeneration $/KWH	Total Cost $	Consumption Unit	Cost $
January, 93	10,253,600	18,984	N/A	N/A	N/A	N/A	472,867	N/A	N/A
February, 93	9,085,600	18,984	N/A	N/A	N/A	N/A	417,992	N/A	N/A
March, 93	9,643,200	19,032	N/A	N/A	N/A	N/A	457,489	N/A	N/A
April, 93	10,156,000	22,912	N/A	N/A	N/A	N/A	510,107	N/A	N/A
May, 93	12,276,800	25,680	N/A	N/A	N/A	N/A	579,119	N/A	N/A
June, 93	15,378,400	30,336	N/A	N/A	N/A	N/A	756,066	N/A	N/A
July, 93	16,056,000	29,952	N/A	N/A	N/A	N/A	784,822	N/A	N/A
August, 93	16,658,400	30,960	N/A	N/A	N/A	N/A	801,535	N/A	N/A
September, 92	16,269,600	31,616	N/A	N/A	N/A	N/A	760,361	N/A	N/A
October, 92	13,277,600	31,312	N/A	N/A	N/A	N/A	629,878	N/A	N/A
November, 92	11,700,00	28,672	N/A	N/A	N/A	N/A	514,344	N/A	N/A
December, 92	9,788,800	19,800	N/A	N/A	N/A	N/A	445,411	N/A	N/A
Total	140,014,000.00	308,240.00	N/A	N/A	N/A	N/A	7,129,991.00	N/A	N/A

	Electricity	Natural Gas
Company Name:	City Public Service	City Public Service
Company Rate Schedule:	Large Lighting and Power	Large Volume

COMPOSITE PROJECT SUMMARY

Listed in Table 2A is a compilation of all recommended ECO's. Tables 3A and 3B are compilations of all recommended ECO's studied as well as the analysis results for each ECO. Table 3A is sorted by building number and Table 3B is sorted by descending SIR. Also, shown in Table 2A is the ECO numbers and ECO descriptions analyzed for this report. A detailed summary of each ECO may be found with each building description and analysis.

SUMMARY OF PROJECT

(All recommended ECO's included - see Table 4 for ECIP summary calculations)

KWH Savings:	2,263,894	KWH/yr
Demand Savings:	7,241.9	KW
Gas Savings:	1,648.4	MCF/yr
Cost Savings:	$ 140,319.00	/Year
Implementation Cost:	$ 1,187,540.00	
Simple Payback:	6.2	Years
Savings to Investment: Ratio (SIR)	2.43	

This report identified capital intensive projects which, if implemented, will result in the savings and costs summarized above. The savings for the recommended composite project listed above account for interdependence of savings of individual ECO's.

SPECIAL CONSIDERATIONS

UTILITY REBATES

City Public Service does not currently offer any utility rebate incentives for energy retrofit measures.

MAINTENANCE AND OPERATION OF RETROFITTED SYSTEMS.

The combination of ECO's identified in this report will result in an overall decrease in maintenance labor and cost. This is due primarily to the installation of new lighting systems with increased service lives and a reduction in operating hours for mechanical equipment with the addition of automatic stop/start functions. Addition of automatic stop/start functions will also extend the useful life of the equipment.

TABLE 2A. SUMMARY OF RECOMMENDED ECO'S AND M & O'S

ENERGY CONSERVATION OPPORTUNITIES	ECO/ M & O	BUILDING # 44	48	368	407	1350	1387	1395	1462	1520	1630	2265	2399	2521	2530	2652	2841	5105	5106	5107	5114	5124	GEN
I. ENVELOPE																							
A. ADDITIONAL INSULATION/SEALING	M & O			X																			
B. INSULATED GLASS OR GLAZING																							
C. WEATHER STRIPING AND CAULKING																							
II. HOT WATER																							
A. SHUTDOWN ENERGY TO WATER HEATER																							
B. ADDITION OF BOOSTER HEATERS AT MAJOR HW USERS																							
C. ADDITION OF INSTANTANEOUS WATER HEATERS																							
III. HEAT RECOVERY																							
A. HEAT RECOVERY FROM DISHWASHERS HOT WATER																							
B. HEAT RECLAIM FROM KITCHEN EXHAUST																							
C. WASTE HEAT RECOVERY																							
IV. HVAC																							
A. NIGHT SETBACK/SETUP THERMOSTAT	ECO	X		X									X	X			X						
B. ECONOMIZER CYCLE(DRY BULB) o																							
C. UPGRADE HVAC CONTROLS																							
1) ADD STOP/START FUNCTION TO HVAC EQUIPMENT	ECO				X											X				X			
D. IMPROVE EFFICIENCY OF OPERATIONS																							
1) REPLACE CHILLER WITH HIGHER EFF/CFC FREE CHILLER	ECO					X		X				X	X										
2) REPLACE RTU WITH HIGHER EFFICIENCY UNIT																							
E. BALANCE HVAC SYSTEM	M & O											X											
F. INSTALL MAKE-UP AIR SUPPLY FOR KITCHEN AREAS	ECO												X										
G. SHUT-OFF RANGE HOOD																							
H. THERMAL STORAGE																							
V. BOILER/STEAM																							
A. STEAM TRAP INSPECTION	M & O												X										
B. INSULATE STEAM AND CONDENSATE LINES																							
VI. POWER																							
A. CONVERT TO ENERGY EFFICIENT/SMALLER MOTORS	M & O																						X
VII. REDUCE/ENHANCE LIGHTING																							
A. PHOTOCELLS FOR LIGHTING																							
B. TIMERS FOR LIGHTING																							
C. REMOVE UNEEDED LAMPS OR FIXTURES	ECO				X							X					X						
D. REDUCE INDOOR/OUTDOOR LIGHTING TO AEI LEVELS	ECO	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			
E. LOWER LIGHT FIXTURES																							
F. IMPROVE REFLECTION WITH LIGHT COLORED CEILINGS/WALLS																							
VIII. IMPROVE LIGHTING CONTROLS																							
A. INSTALL OCCUPANCY SENSORS																							
B. SEPERATE SWITCHES TO CONTROL LIGHTING																							
IX. IMPROVE LIGHTING EFFICIENCY																							
A. REPLACE INCANDESCENT LAMPS WITH COMPACT FLUORESCENTS	ECO		X	X	X		X	X		X	X		X	X		X	X			X			
B. REPLACE INCANDESCENT EXIT FIXTURES WITH LED	ECO				X				X	X		X	X		X	X	X			X			
C. REPLACE STANDARD LAMPS WITH ENERGY SAVING LAMPS	ECO	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			
D. REPLACE STANDARD BALLAST WITH ENERGY SAVING BALLAST	ECO	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			
E. REPLACE EXISTING FIXTURES WITH HIGH EFF. FIXTURES	ECO																X						
X. REFRIGERATION EQUIPMENT																							
A. IMPROVE EFFICIENCY OF REFIGERATION EQUIPMENT																							
B. ADD PLASTIC AIR CURTAINS TO PREVENT INFILTRATION	M & O			X	X		X	X					X				X			X			
XI. OTHER																							
A. REPLACE BOILERS WITH 99% EFFICIENT BOILER																							
B. REDUCE HW TEMPERATURE TO 140 ^F	M & O			X																			
C. RESTORE OPEARTION OF VENTILATION UNIT	M & O																			X			

TABLE 3A. COMPOSITE ECO SUMMARY (BY BUILDING)

BUILDING NUMBER	ECO NUMBER	USAGE SAVINGS (KWH/YR)	DEMAND SAVINGS (KW/YR)	GAS SAVINGS (MCF/YR)	MAINT. SAVINGS ($/YR)	COST SAVINGS ($/YR)	IMPLEMENTATION COST ($)	SIMPLE PAYBACK (YEARS)	SAVING TO INV. RATIO (SIR)
BUILDING 44	IV.A	472	0	3.5	-$5.00	$29.00	$122.00	5.1	2.7
BUILDING 44	VII.C,D & IX C, D	8,409	18.6	N/A	$33.00	$460.00	$2,117.00	4.6	2.28
BUILDING 48	IX.A	709	2.6	N/A		$54.00	$89.00	1.7	5.41
BUILDING 368	IV.A	2,649	0.0	19.6	-$15.00	$164.00	$363.00	2.4	5.5
BUILDING 368	VII.C,D & IX A, C, D	19,807	43.9	N/A	$110.00	$1,116.00	$2,244.00	2	5.07
BUILDING 407	IV.C.1	181,265	0.0	660.6	-$45.00	$8,781.00	$2,233.00	0.3	34.9
BUILDING 407	VII.C, D & IX A, B, C, D	12,315	53.2	N/A	$214.00	$1,012.00	$4,557.00	4.5	1.97
BUILDING 1350	IV.D.1)	126,750	528.0	0.0		$8,084.00	$231,987.00	11.8	1.05
BUILDING 1350	VII.C,D, & IX B,C,D.	23,724	67.0	N/A	$289.00	$2,783.00	$9,130.00	3.3	3.45
BUILDING 1387	VII C,D, & IX.A,B,C,D	19,311	29.9	N/A	$127.00	$1,022.00	$2,592.00	2.5	4.46
BUILDING 1395	IV.D. 1)	123,020	1,152.0	N/A		$12,302.00	$159,262.00	8.2	1.81
BUILDING 1395	VII.C,D & IX.A,B,C,D	42,637	53.7	N/A	$286.00	$2,179.00	$4,850.00	2.2	5.08
BUILDING 1462	VII.C,D & IX.B,C,D	8,760	15.4	N/A	$37.00	$455.00	$1,037.00	2.3	4.96
BUILDING 1520	VII C, D, & IX.A,B,C,D	12,030	26.8	N/A	$52.00	$664.00	$2,447.00	3.7	3.06
BUILDING 1630	VII.C,D & IX.A,C,D	2,397	5.5	N/A	$10.00	$133.00	$357.00	2.7	4.21
BUILDING 2265	IV.D 1)	424,595	1,740.0	N/A		$26,888.00	$338,516.00	7.7	2.02
BUILDING 2265	VII.C,D, & IX B,C,D	49,856	46.7	N/A	$242.00	$2,349.00	$2,723.00	1.2	9.77
BUILDING 2399	IV.A	7,528	0.0	89.1	-$15.00	$575.00	$363.00	0.6	21.15
BUILDING 2399	IV. D. 1)	926,098	3,192.0	N/A		$54,626.00	$365,824.00	5.1	3.02
BUILDING 2399	IV. F. 1.	41,614	0.0	617.0		$3,604.00	$31,268.00	8.7	2.09
BUILDING 2399	IV. F. 2.	4,776	0.0	70.8		$414.00	$3,976.00	9.6	1.89
BUILDING 2399	VII.C,D & IX.A,B,C,D	18,019	28.4	N/A	$269.00	$1,574.00	$8,895.00	5.7	2
BUILDING 2521	IV A.	278	0.0	2.1	-$5.00	$17.00	$122.00	10	1.42
BUILDING 2521	VII.C,D & IX.A,C,D	2,994	13.3	N/A	$15.00	$212.00	$866.00	4.1	2.75
BUILDING 2530	VII, C,D & IX.B,C,D	5,444	9.1	N/A	$23.00	$280.00	$591.00	2.1	5.36
BUILDING 2652	IV.C. 1)	41,114	0.0	39.0		$1,613.00	$2,292.00	1.4	8.49
BUILDING 2652	VIII.C,D & IX,A,B,C,D	8,090	11.7	N/A	$36.00	$406.00	$1,588.00	3.9	2.89
BUILDING 2841	IV.A	2,000	0.0	23.5	-$10.00	$152.00	$242.00	1.7	8.13
BUILDING 2841	VII.C,D, & IX.A,B,C,D,E	111,658	185.9	N/A	$1,703.00	$6,903.00	$4,343.00	0.6	18.1
BUILDING 5105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BUILDING 5107	IV.C. 1)	22,613	0.0	N/A	-$15.00	$814.00	$425.00	0.5	22.17
BUILDING 5107	VII.C,D, & IX.A,B,C,D	12,962	18.2	N/A	$66.00	$654.00	$2,119.00	3.2	3.49
BUILDING 5114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BUILDING 5124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		2,263,894	7,241.9	1,525.2	$3,402.00	$140,319.00	$1,187,540.00	6.20	2.43

Eng Sav = 2,263,894 kwhr/yr × 3,413 BTU/kwhr × MBTU/10^6 BTU = 7,729 MBTU/yr

$ Sav = $140,319/yr

140 $K/yr

TABLE 3B. COMPOSITE ECO SUMMARY (BY SIR)

BUILDING NUMBER	ECO NUMBER	USAGE SAVINGS (KWH/YR)	DEMAND SAVINGS (KW/YR)	GAS SAVINGS (MCF/YR)	MAINT. SAVINGS ($/YR)	COST SAVINGS ($/YR)	IMPLEMENTATION COST ($)	SIMPLE PAYBACK (YEARS)	SAVING TO INV. RATIO (SIR)
BUILDING 407	IV.C.1	181,265	0.0	660.6	-$45.00	$8,781.00	$2,233.00	0.3	34.9
BUILDING 5107	IV.C. 1)	22,613	0.0	N/A	-$15.00	$814.00	$425.00	0.5	22.17
BUILDING 2399	IV.A	7,528	0.0	89.1	-$15.00	$575.00	$363.00	0.6	21.15
BUILDING 2841	VII.C,D, & IX.A,B,C,D,E	111,658	185.9	N/A	$1,703.00	$6,903.00	$4,343.00	0.6	18.1
BUILDING 2265	VII.C,D, & IX B,C,D	49,856	46.7	N/A	$242.00	$2,349.00	$2,723.00	1.2	9.77
BUILDING 2652	IV.C. 1)	41,114	0.0	39.0		$1,613.00	$2,292.00	1.4	8.49
BUILDING 2841	IV.A	2,000	0.0	23.5	-$10.00	$152.00	$242.00	1.7	8.13
BUILDING 368	IV.A	2,649	0.0	19.6	-$15.00	$164.00	$363.00	2.4	5.5
BUILDING 48	IX.A	709	2.6	N/A		$54.00	$89.00	1.7	5.41
BUILDING 2530	VII, C,D & IX.B,C,D	5,444	9.1	N/A	$23.00	$280.00	$591.00	2.1	5.36
BUILDING 1395	VII.C,D & IX.A,B,C,D	42,637	53.7	N/A	$286.00	$2,179.00	$4,850.00	2.2	5.08
BUILDING 368	VII.C,D & IX A, C, D	19,807	43.9	N/A	$110.00	$1,116.00	$2,244.00	2	5.07
BUILDING 1462	VII.C,D & IX.B,C,D	8,760	15.4	N/A	$37.00	$455.00	$1,037.00	2.3	4.96
BUILDING 1387	VII C,D, & IX.A,B,C,D	19,311	29.9	N/A	$127.00	$1,022.00	$2,592.00	2.5	4.46
BUILDING 1630	VII.C,D & IX.A,C,D	2,397	5.5	N/A	$10.00	$133.00	$357.00	2.7	4.21
BUILDING 5107	VII.C,D, & IX.A,B,C,D	12,962	18.2	N/A	$66.00	$654.00	$2,119.00	3.2	3.49
BUILDING 1350	VII.C,D, & IX B,C,D.	23,724	67.0	N/A	$289.00	$2,783.00	$9,130.00	3.3	3.45
BUILDING 1520	VII C, D, & IX.A,B,C,D	12,030	26.8	N/A	$52.00	$664.00	$2,447.00	3.7	3.06
BUILDING 2399	IV. D. 1)	926,098	3,192.0	N/A		$54,626.00	$365,824.00	5.1	3.02
BUILDING 2652	VIII.C,D & IX,A,B,C,D	8,090	11.7	N/A	$36.00	$406.00	$1,588.00	3.9	2.89
BUILDING 2521	VII.C,D & IX.A,C,D	2,994	13.3	N/A	$15.00	$212.00	$866.00	4.1	2.75
BUILDING 44	IV.A	472	0	3.5	-$5.00	$29.00	$122.00	5.1	2.7
BUILDING 44	VII.C,D & IX C, D	8,409	18.6	N/A	$33.00	$460.00	$2,117.00	4.6	2.28
BUILDING 2399	IV. F. 1.	41,614	0.0	617.0		$3,604.00	$31,268.00	8.7	2.09
BUILDING 2265	IV.D 1)	424,595	1,740.0	N/A		$26,888.00	$338,516.00	7.7	2.02
BUILDING 2399	VII.C,D & IX.A,B,C,D	18,019	28.4	N/A	$269.00	$1,574.00	$8,895.00	5.7	2
BUILDING 407	VII.C, D & IX A, B, C, D	12,315	53.2	N/A	$214.00	$1,012.00	$4,557.00	4.5	1.97
BUILDING 2399	IV. F. 2.	4,776	0.0	70.8		$414.00	$3,976.00	9.6	1.89
BUILDING 1395	IV.D. 1)	123,020	1,152.0	N/A		$12,302.00	$159,262.00	8.2	1.81
BUILDING 2521	IV A.	278	0.0	2.1	-$5.00	$17.00	$122.00	10	1.42
BUILDING 1350	IV.D.1)	126,750	528.0	0.0		$8,084.00	$231,987.00	11.8	1.05
BUILDING 5114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BUILDING 5105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BUILDING 5124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOTAL		2,263,894	7,241.9	1,525.2	$3,402.00	$140,319.00	$1,187,540.00	6.20	2.43

TABLE 4. ECIP SUMMARY

LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

LOCATION: FORT SAM HOUSTON REGION NO. 3 PROJECT NO. 91109912F
PROJECT TITLE: FORT SAM HOUSTON DINING FACILITIES EEAP FISCAL YEAR 1994
DISCRETE PORTION NAME: COMPOSITE ECO SUMMARY
ANALYSIS DATE: NOVEMBER 1, 1993 ECONOMIC LIFE 20 PREPARER S. P. CLARK

1. INVESTMENT COSTS:

A. CONSTRUCTION COST	$1,065,058		
B. SIOH	$58,578		
C. DESIGN COST	$63,903		
D. TOTAL COST (1A+1B+1C)	$1,187,540		
E. SALVAGE VALUE OF EXISTING EQUIPMENT		$0	
F. PUBLIC UTILITY COMPANY REBATE		$0	
G. TOTAL INVESTMENT (1D−1E−1F)			$1,187,540

2. ENERGY SAVINGS (+)/COST(−):

DATE OF NISTIR 85−3273−X USED FOR DISCOUNT FACTORS: 'NOVEMBER 4, 1992

ENERGY SOURCE	COST $/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL $ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVINGS(5)
A. ELEC	$10.55	7726.67	$81,516	14.65	$1,194,215
B. DIST			$0	17.70	$0
C. RESID			$0	20.99	$0
D. NG	$3.31	1699.50	$5,625	20.60	$115,882
E. PPG			$0	13.59	$0
F. COAL			$0	16.32	$0
G. SOLAR			$0	13.59	$0
H. GEOTH			$0	13.59	$0
I. BIOMA			$0	13.59	$0
J. REFUS			$0	13.59	$0
K. WIND			$0	13.59	$0
L. OTHER			$0	13.59	$0
M. DEMAND SAVINGS			$48,279	13.59	$656,109
N. TOTAL		9426.17	$135,421		$1,966,206

3. NON ENERGY SAVINGS (+) OR COST (−):

A. ANNUAL RECURRING (+/−)	$3,402		
1. DISCOUNT FACTOR (TABLE A)		13.59	
2. DISCOUNTED SAVINGS/COST (3A X 3A1)			$46,233

52,540
191,363

LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

B. NON RECURRING SAVINGS (+) OR COST(−)

	ITEM	SAVINGS(+) COST(−)(1)	YEAR OF OCCUR.(2)	DISCOUNT FACTOR(3)	DISCOUNTED SAV−INGS(+)COST(−)(4)
a.	N/A	$429,288	1	0.96	$412,116
b.	N/A	$0	2	0.92	$0
c.	N/A	$338,516	3	0.89	$301,279
d.	N/A	$0	4	0.85	$0
e.	N/A	$0	5	0.82	$0
f.	N/A	$0	6	0.79	$0
g.	N/A	$0	7	0.76	$0
h.	N/A	$0	8	0.73	$0
i.	N/A	$0	9	0.7	$0
j.	N/A	$0	10	0.68	$0
k.	N/A	$0	11	0.65	$0
l.	N/A	$0	12	0.62	$0
m.	N/A	$51,000	13	0.6	$30,600
n.	N/A	$0	14	0.58	$0
o.	Chiller	$231,987	15	0.56	$129,913
p.	TOTAL	$1,050,791			$873,908

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (3A2 + 3Bp4) $920,142

4. SIMPLE PAYBACK 1G/(2N3+3A+(3Bp1/ECONOMIC LIFE)): 6.2 YEARS

5. TOTAL NET DISCOUNTED SAVINGS (2N5+3C): $2,886,347

6. SAVINGS TO INVESTMENT RATIO (SIR) 5/1G: 2.43

7. ADJUSTED INTERNAL RATE OF RETURN (AIRR): 8.7%

CONCLUSIONS

The results of this analysis indicate that the ECO's recommended result in a project which is eligible of ECIP funding. The approximate implementation cost for the project is $1,187,540.00 with a simple payback of 6.2 years and an SIR of 2.43. The adjusted internal rate of return is 8.7%.

MAINTENANCE AND OPERATIONAL RECOMMENDATIONS

I. ENVELOPE

A. Additional Insulation/Sealing

The ductwork for the rooftop unit serving the office area in Building 368 should be resealed.

IV. HVAC

E. Balance HVAC System

The make-up air kitchen hoods for Building 2265 have the make-up supply louvers closed. These supply louvers should be fully open in order for the hood to function properly.

V. BOILER/STEAM

A. Steam Trap Inspection

The steam traps for Building 2399 appear to be original to the building and should be replaced to prevent blow by of live steam.

X. REFRIGERATION EQUIPMENT

B. Add Plastic Air Curtains to Prevent Infiltration

The following buildings have walk-in freezers and refrigerators that do not have plastic air curtains or have torn curtains in need of replacement; Buildings 368, 407, 1387, 1395, 2399, 2841 and 5107. Addition or replacement of air curtains will reduce energy consumption due to infiltration and exfiltration.

XI. OTHER

B. Reduce Hot Water Temperature to 140°F

Currently, the domestic hot water temperature is set at 160°F for Building 368. This facility contains an automatic dishwasher with a booster heater for sanitization. The optimum temperature for the domestic hot water is 140°F. Reducing the temperature will result in a reduction in energy consumption.

C. Restore Operation of Ventilation Unit

Currently, a ventilation unit is disabled which is intended to serve the kitchen area for Building 5107. As a result, the kitchen hoods are exhausting conditioned air from the adjacent dining area. Restoring operation of this unit would reduce energy consumption related to the exhausted conditioned air.